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# SEEDS USED IN HANDICRAFTS MANUFACTURED BY AN EMBERÁ-KATÍO INDIGENOUS POPULATION DISPLACED BY VIOLENCE IN COLOMBIA

## Semillas usadas en artesanías por una población indígena Emberá-Katío desplazada por la violencia en Colombia

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**ABSTRACT**
The sale of handicrafts embellished with seeds is an important source of income for a displaced indigenous Emberá-Katío group that lives in the city of Florencia (Departamento of Caquetá, Colombia). We provide a list of the 34 plant species (23 genera in 10 families) used in handicrafts, as well as information on where and how the are obtained. Seeds of native legumes (family Fabaceae) are the main material used. Most manufactured items have seeds of *Ormosia nobilis* (Fabaceae), *Canna edulis* (Cannaceae), and *Sapindus saponaria* (Sapindaceae). About half of the plant species used by the Emberá-Katío are perennial trees. Except for the seeds of *Coix lacryma-jobi* (Poaceae) and *Ormosia* sp., which are obtained from other local indigenous groups such as the Koreguajes and Uitotos, all seeds are collected from small patches of secondary forest near or within the city. Because most plants used are native and widely distributed in the Neotropical region, we suggest that, despite cultural transformation, at least some cultural knowledge about native plants is still maintained, and we speculate that other Emberá groups might use the same or similar plant species. We also provide the Spanish and Emberá names of the plants used in the handicrafts.

**Key words.** Amazonia, ethnobotany, Fabaceae.

**RESUMEN**
La venta de artesanías adornadas con semillas es una fuente importante de dinero para un grupo indígena Emberá-Katío desplazado que vive en la ciudad de Florencia (Departamento del Caquetá, Colombia). Presentamos una lista de las 34 especies de plantas (23 géneros en 10 familias) usadas en las artesanías, así como información sobre dónde y cómo las obtienen. El principal material usado son las semillas de legumbres nativas (familia Fabaceae). La mayoría de las

artesanías son hechas de semillas de *Ormosia nobilis* (Fabaceae), *Canna edulis* (Cannaceae), y *Sapindus saponaria* (Sapindaceae). Casi la mitad de las especies de plantas usadas por los Emberá-Katío son árboles. Las semillas son recolectadas en pequeños parches de bosques secundarios cerca o dentro de la ciudad, excepto las semillas de *Coix lacryma-jobi* (Poaceae) y *Ormosia* sp., las cuales son obtenidas de otras tribus indígenas locales como los Koreguajes y Uitotos. Debido a que la mayoría de las plantas son nativas y ampliamente distribuidas en la región neotropical, sugerimos que a pesar de la transformación cultural, al menos parte del conocimiento cultural todavía se mantiene, y especulamos que otros grupos Emberá también podrían usar las mismas o especies similares de plantas. También proporcionamos los nombres en Español y Emberá de las plantas usadas en las artesanías.

**Palabras clave.** Amazonía, etnobotánica, Fabaceae.

## INTRODUCTION

The sale of handicrafts embellished mainly with seeds is an important source of income for a displaced indigenous Emberá-Katío group that lives in the city of Florencia (Departamento of Caquetá, Colombia). Given the importance of seeds in handicrafts, the purpose of this paper is to provide information on the identity of these seeds, and where and how they obtain them. Our results are noteworthy given the apparent lack of knowledge of the plants used in handicrafts, and the rate at which indigenous cultures are transforming (i.e., experiencing cultural loss and adaptation to new cultural environments). In general, most ethnobotanical studies have focused on those plant species used for food, medicine, rituals, and housing materials (e.g., Torres de Araúz 1980, Vasco 1985, Harp 1994, Kane 1995). Thus, information on the plants used primarily in decorative crafts by the Emberá is scarce. Also, during the past five decades, as many as two million Colombians (~ 5% of the country population) have been forced to leave rural areas and migrate to regional urban centers. Such migrations are the result of an ongoing armed conflict among the guerrilla groups, paramilitary forces, and the Colombian army. Today, at least 74 % of Colombian municipalities have experienced expulsion or reception of displaced populations (e.g., Engel & Ibáñez 2007). Colombian indigenous cultures are rapidly transforming and their ethnobotanical knowledge might be lost forever.

The Emberá, which belong to the linguistic family of Chocó, is one of 80 indigenous groups in Colombia (Arango & Sánchez 2004). Accounting for ~ 11% (80.000 people) of the total indigenous population of the country, the Emberá are primarily located in tropical lowland forests along the pacific coast of the Chocó bioregion which extends from southeastern Panama to northwestern Colombia (Arango & Sánchez 2004). The Emberá members traditionally have a semi-nomadic lifestyle as hunter-gatherers that include subsistence horticulture and fishing (Herlihy 1995). Several Emberá groups are named according to their place of origin. The Emberá-Katío of the present study are those Emberá that inhabited or inhabit the southern area of the modern-day Departmento of Cordoba and northwestern area of Departamento of Antioquia. As a result of violence, the members of Emberá-Katío are now sparsely located throughout most of the western and southern areas of Colombia (Fig. 1).

**Figure 1.** Distribution of the indigenous group Emberá-Katío in Colombia. Gray shaded area represents the approximate original distribution of this group in the south of the modern-day Departmento of Cordoba, and northwestern Departamento of Antioquia. Black dots indicate the current distribution of this indigenous group in Colombia (Arango & Sánchez 2004). Florencia city is indicated by a star.

The Colombian government relocated four Emberá-Katío populations 36 years ago onto reservations near Florencia. About 80 people, including women and children, live permanently in Florencia in four houses and an old school building in one of the poorest and most violent neighborhoods in the city (S. Pirango, pers. comm.). These Emberá-Katío make their living by selling jewelry and handicrafts made of seeds, fruits, and natural fibers that are sold on the streets and festivals in Florencia and nearby towns for $1–$4 USD.

Given that the sale of handicrafts is the main source of income for this displaced Emberá-Katío group in Florencia, and the potential loss of cultural knowledge about native

plants, we address the following questions: 1) what plant species do the members of this indigenous group use to make handicrafts? 2) are these plants native or introduced? and 3), where and how does this Emberá-Katío group obtain these plants?

We found that this Emberá-Katío group uses seeds of 34 plant species, most of them native to the Neotropical region, and that legume seeds (family Fabaceae) are the main material used. Seeds are gathered from patches of secondary forest near or within the city, except for the seeds of two plant species which are traded or purchased from local indigenous groups such as the Koreguajes and Uitotos. We also provide the Spanish and Emberá names of these plants used in handicrafts.

## MATERIALS AND METHODS

This study was done in Florencia (Caquetá), a city of ~ 150.000 people located on the eastern slope of the Andes in southern Colombia (1°37'7''N, 75°37'04'W, 270 m, Fig. 1). Between August 2004 and May 2005, six adult women and nine adult men ($n$ = 15) from the displaced Emberá-Katío who agreed to participate and who also make and sell the handicrafts were interviewed. The interviews were conducted by G.F. and an informed consent was obtained from every individual interviewed. The interviews focused on questions about the indigenous names given to the plants, along with the modes of collection and preservation of the seeds. Plants were identified by E.T. and M.A.C. using the works of Gentry (1993) and Cárdenas *et al*. (2005), and by comparison of museum specimens deposited at the Herbario Enrique Forero G. (HUAZ), Universidad de la Amazonía, Florencia (Caquetá). The taxonomic nomenclature follows that of the International Plant Names Index (2004). Information on the plant species distribution and toxicity were extracted from Gentry (1993) and Fern (1997). Voucher specimens of the seeds and fruits are deposited in HUAZ. V.H.G. analyzed the results and wrote the paper; all authors discussed and commented on the manuscript.

## RESULTS

To manufacture handicrafts, the displaced Emberá-Katío members in Florencia use seeds from 34 plant species belonging to 23 genera in 10 families (Table 1). Seeds of several species of legumes (family Fabaceae) are the main material used, including both native species (e.g., *Ormosia* spp.) and introduced species (e.g., *Adenanthera pavonina*). The seeds used in handicrafts are dark brown, black, or bright red in color. Seeds range from 5 to 18 mm in diameter, usually have a smooth testa, and are ovoid, spherical, elongated, triangular, or reniform in shape. Most manufactured items (Table 1) have seeds of *Ormosia nobilis*, *Canna edulis*, and *Sapindus saponaria*, occasionally mixed with seeds of *Erythroxylon* sp. and *Hevea brasiliensis*.

Six plant species (e.g., *Abrus precatorius*) used by the Emberá-Katío were introduced to the Neotropical region, and are now extensively cultivated in many parts of the world. About half of the plants species used by the Emberá-Katío are perennial trees, while the remaining species are shrubs and herbs (Table 1). Most of the seeds are collected in small patches of secondary forest near or within Florencia. However, seeds of *Coix lacryma-jobi* and *Ormosia* sp. are regularly traded or purchased from other local indigenous groups such as the Koreguajes and Uitotos. Once collected, the seeds are washed with water and dried under the sun. The seeds are then coated with recycled automobile oil to prevent the attack of insects and to make them shine. Holes for stringing are then drilled with an electric or hand powered drill. Seeds are tied with either natural threads (e.g., cumare, *Astrocaryum chambira* Burret, Arecaceae, *Agave* sp., Agavaceae) or synthetic fibers (e.g., nylon).

**Table 1.** Seeds used in handicraft manufactured by a displaced Emberá-Katío population in Florencia (Caquetá, Colombia).

**Names**: Spanish common names are followed by indigenous names in parentheses. **Origin**: A = Asia, M = Madagascar, N = Neotropics, U = North America. **Form**: H = herb, S = shrub, T = perennial tree. **Toxicity:** + = toxic seeds. **Uses**: B = Bracelet, E = earrings, Hc = Hair clip, Me = Medicine (members of the Emberá-Katío claimed that infusions of these seeds help to lower blood cholesterol, increase immune system response, and accelerate healing of stomach ulcers), Mg = Magic (i.e., good luck and protection against spirits), Nl = Necklace, O = other decorative items, R = Rattle.

| | | | | | Uses | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Plant species** | **Names** | **Origin** | **Form** | **Toxicity** | **B** | **E** | **Hc** | **Me** | **Mg** | **Nl** | **O** | **R** |
| **ARECACEAE** | | | | | | | | | | | | |
| *Attalea maripa* (Aubl.) Mart. | Guajo (Palma tá) | N | T | | | X | | X | | X | | |
| *Bactris gasipaes* Kunth | Chontaduro (Jea tá) | N | T | | | | | | | X | | |
| *Euterpe* sp. | Azai | N | T | | X | X | | | | X | | |
| *Iriartea deltoidea* Ruiz & Pav. | Chontilla (Memetá baibua) | N | T | | | | | | X | X | | |
| *Oenocarpus bataua* Mart. | Milpesos (Comnaretá) | N | T | | | | | | | X | | |
| Arecaceae type 1 | Palma | | T | | | | | | | X | | |
| **APOCYNACEAE** | | | | | | | | | | | | |
| *Thevetia peruviana* (Pers.) K. Schum. | Enebro (Neta birgriei) | N | T | + | | | | X | | X | | X |
| **BURSERACEAE** | | | | | | | | | | | | |
| *Protium* sp. | Anime (Tachipichi) | N | T | | | | | | | X | X | |
| *Protium amplum* Cuatr. | Anime (Anime tá) | N | T | | | | | | | X | X | X |
| **CANNACEAE** | | | | | | | | | | | | |
| *Canna edulis* Ker Gawl. | Achira, Cirilla de caña | N | H | | X | X | | | | X | X | |
| **ERYTHROXYLACEAE** | | | | | | | | | | | | |
| *Erythroxylon* sp. | Coca | N | S | | | X | | | | X | | X |
| **EUPHORBIACEAE** | | | | | | | | | | | | |
| *Hevea brasiliensis* (Willd. ex A. Juss.) Müll. Arg. | Caucho (Cauchotá) | N | T | + | | | | X | | | X | |
| **FABACEAE** | | | | | | | | | | | | |
| *Abrus* sp. | Peonía hembra | A | V | + | | | | | | X | | |
| *Abrus precatorius* L. | Peonía macho (Memberetápisi) | A | V | + | | | | X | | X | | |
| *Acacia* sp. | Acacia | A | T | | | | | | | X | | |
| *Adenanthera pavonina* L. | Chocho (Mevenetá) | A | T | + | X | X | | | | X | | |
| *Delonix regia* (Bojer ex Hook.) Raf. | Acacia roja (Bacurutá) | M | T | | X | X | | | | X | | |
| *Erythrina fusca* Lour. | Búcaro | N | T | | | X | | | | X | | |

| Plant species | Names | Origin | Form | Toxicity | Uses | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | B | E | Hc | Me | Mg | Nl | O | R |
| *Erythrina poeppigiana* (Walp.) O. F. Cook | Chocho | N | T | | X | X | | | | X | | |
| *Enterolobium* sp. | Orejero | N | T | | X | X | | | | X | | |
| *Enterolobium cyclocarpum* (Jacq.) Griseb. | Orejero (Curunetá) | N | T | | X | X | | | | X | | |
| *Leucaena leucocephala* (Lam.) de Wit | Carbonero blanco | N | T | | X | X | | | | X | | |
| *Mucuna* sp.1 | Ojo de buey pequeño | N | V | | | | X | | X | X | X | |
| *Mucuna* sp.2 | Ojo de buey (Pacatautá) | N | V | | | | X | | | X | X | X |
| *Ormosia nobilis* Tul. Var. *santaremnensis* (Ducke) Rudd. | Chocho | N | T | | X | | X | | | X | X | X |
| *Ormosia* sp.1 | Chocho | N | T | | X | X | | | | X | X | |
| *Ormosia* sp.2 | Chocho | N | T | | X | X | | | | X | X | |
| *Parkia insignis* Kurz | Guarango (Quitapartá) | N | T | | | X | | X | | X | | |
| *Parkia multijuga* Benth | Guama grande (Tacurutá) | N | T | | | | | | | X | | |
| Fabaceae type 1 | Pongolo (Biuritá) | N | V | | | | | | X | X | X | |
| Fabaceae type 2 | Dividivi (Netacarrapatá) | N | T | | X | X | | | | X | X | |
| **POACEAE** | | | | | | | | | | | | |
| *Coix lacryma-jobi* L. | Lágrimas de san pedro (Sasamartá) | A | H | | X | X | | | X | X | X | |
| **SAPINDACEAE** | | | | | | | | | | | | |
| *Sapindus saponaria* L. | Chambimbe (Neta chumbimba) | U | T | | X | X | | | X | X | X | |
| **SAPOTACEAE** | | | | | | | | | | | | |
| *Pouteria* sp. | Caimo (Caimotá) | N | S | | | | | X | | X | X | |

Some seeds, such as those of *Canna edulis*, are perforated with a steel needle before they harden, and seeds of *Mucuna* sp. and *Protium* sp. are cut into two or more pieces (Figs. 2, 3). Handicrafts are made by members of both sexes and all ages in the group; however, women and children are mostly in charge of selling them on the streets.

The handicrafts utilizing seeds are often accompanied by other materials. The seed work is often elaborated with plastic beads, locally known as chaquiras and purchased in local stores. The only fruit used is that of *Macrolobium acaciifolium* (Fabaceae). Animal materials (Figs. 3, 4) are usually obtained from the Emberá-Katío reservations

near Florencia and include such items as: domestic rabbit skin (*Silvilagus* spp.), beaks of toucan birds (Piciformes: Ramphastidae, *Ramphastos* spp. and *Pteroglossus* spp.), feathers of macaws (*Ara* spp.) and parakeets (*Aratinga* spp. and *Amazona* spp.), turtle shells (*Podocnemis expansa*), and canine teeth of ocelots (Felidae, *Felix* spp.) and monkeys (*Saimiri* spp. and *Cebus* spp.).

**Figure 2.** Examples of handicrafts made by the Emberá-Katío group in Florencia. Ornamented section of a wooden cane. Large seeds cut in pieces belong to an unidentified species of Fabaceae mixed with seeds of *Coix lacryma-jobi* (whitish seeds) and *Erythrina poeppigiana* (red seeds).

**Figure 3.** Necklace made of *Canna edulis* (small black seeds) with macaw and parakeet feathers.

**Figure 4.** Necklace made of *Sapindus saponaria* (large black seeds) and *Coix lacryma-jobi* (whitish seeds). These two seeds are separated by small plastic chaquira beads.

## DISCUSSION

Ethnobotanical studies on the plants used by the Emberá, and perhaps as well as by other indigenous people, have focused on those plant species used for food, medicine, rituals, and housing materials (e.g., Torres de Araúz 1980, Vasco 1985, Harp 1994, Kane 1995). Except for the work of Runk (2001) on the palm fibers used for basketry by a Panamanian Emberá population, information on the plants used in handicrafts by this indigenous group is scarce. This lack of data precludes detailed comparisons with other Emberá or other indigenous groups. However, considering the apparent cultural transformation of this displaced indigenous population, 34 plant species used in handicrafts alone seems to be a relatively high number when compared

to a total of 44 species reported for medical purposes by a Panamanian Emberá group (Kane 1995). Seeds of only six introduced species are used by the Emberá-Katío in Florencia (Table 1). Among them, *Abrus precatorius* and *Adenanthera pavonina* have bright red seeds that might be highly toxic when ingested raw (e.g., Rajaram & Janardhanan 1992). Both Asian species are now cultivated in many parts of the world, and to our knowledge, there are no reported cases of intoxication by these seeds in Florencia. Because most plants (~ 76 %) used by the displaced Emberá-Katío group are native and widely distributed in the Neotropical region, we suggest that at least some cultural knowledge about native plants is still maintained, and we speculate that other Emberá groups might use the same or closely related plant species. Cultural knowledge about native plants could have been maintained either by the frequent contact with those members of the same group that reside on reservations or by contact with the local indigenous tribes, the Koreguajes and Uitotos. Undoubtedly, research on this is needed.

The suggestion that other Emberá groups might use the same or closely related plant species in handicrafts is strengthened by the fact that several species of the legume genus *Erythrina* (Fabaceae), as well as the palm *Bactris gasipaes*, have wide distributions in the tropics of the Americas and are similarly used by several indigenous populations throughout Central and South America (e.g., Torres de Araúz 1980, Henderson *et al*. 1995).

Legume seeds are perhaps commonly used because of their shape, smooth and hard testa, and local abundance. For example, at least some of the species used by the Emberá-Katío in Florencia, such as *Delonix regia*, *Leucaena leucocephala,* and *Enterolobium cyclocarpum*, are commonly found in parks or green areas within the city (Correa & Trujillo, pers. obs.). However, seasonal shortage in seeds and fruits diminishes handicraft production according to some informants. Thus, considering that the sale of handicrafts is an important source of income for the displaced Emberá-Katío, it is worth investigating the annual reproductive phenology as well as the effect, if any, of seed and fruit harvesting on the local plant populations.

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